REMARKS

Applicants respectfully request entry of this Amendment and reconsideration of this application, as amended.

Summary of Status of Amendments and Office Actions

Claims 1 and 6 presently stand rejected by the Examiner. Claims 2 and 7 through 10 were previously cancelled by Examiner's Amendment. Applicants previously cancelled claims 3 through 5 without prejudice.

As indicated in the Amended Claims presented above, Applicants are currently amending claim 1 to reflect production of monoalkylaromatic compounds as supported in the specification at page 9, lines 30 to 31. Applicants further wish to reinstate claims 2 through 5 and 7 through 10, renumbered as claims 11 through 18, respectively, as indicated in the Amended Claims presented hereinabove. Applicants also wish to add new claims 19 and 20, supported by the text at page 8, lines 28 to 30.

Upon entry of the amendments indicated herein, claims 1, 6, and 11 through 20 will be pending in this application, with claim 1 being independent.

Interview Summary

Applicants' Attorney appreciates the Examiner's allowing an interview on May 15, 2003. In that interview, Applicants' Attorney restated arguments previously presented regarding the disclosures of Degnan et al. and pointed out that there was no indication by Degnan et al. that phosphorous would be beneficial to the use of MCM-56 in aromatics alkylation. Applicants further discussed with the Examiner the possibility of limiting claims to monoalkylation of aromatic compounds. No agreement was reached.

Rejections Under 35 U.S.C. 102(b)

The Examiner has rejected claim 1 as being anticipated by Dessau et al. (U.S. Patent No. 5,939,597). The Examiner stated that Dessau et al. disclose "a process of methylation of toluene in the presence of a catalyst containing MCM-22 and phosphorous (the abstract; col. 4, lines 39-

45; col. 5, lines 34-36)." Applicants respectfully request withdrawal of this rejection for the following reasons.

It is respectfully noted that the addition of phosphorous to the catalyst described by Dessau et al. was for the purpose of enhancing the toluene alkylation selectivity for para-xylene (emphasis added, col. 5, lines 14 to 48). Selectivity for a para- isomer is a result contrary to the desired production of monoalkylaromatic compounds now specified in claim 1 as presently amended. Applicants respectfully submit that this rejection is now moot in light of the amendment made to claim 1.

With respect to claim 1, the Examiner has further stated that U.S. Patent No. 5,536,894 to Degnan et al. discloses "alkylation of an aromatic such as benzene with ethylene or propylene in the presence of a catalyst containing MCM-56 and phosphorous (the abstract; col. 10, lines 28-67; col. 14, lines 7-11)." The Examiner previously noted that Degnan et al. only mention the amount of phosphorous contained in the catalyst in Example 15 which discloses a catalyst containing 2.2 wt.% of phosphorous. The Examiner also previously noted that "one having ordinary skill in the art who studies the teaching of Degnan and examples 5-9 and table 3 of this application must recognize that applicants of this application are the first who discover the benefit of using a catalyst having 0.05 to 0.5 wt.% of phosphorous as [previously] called for in claim 1."

Applicants respectfully note that the catalyst of Example 15 disclosed by Degnan et al. was prepared for use in catalytic cracking with phosphorous added to improve thermal stability under severe reaction conditions. The disclosed preparation further included severe steam treatments to reduce the catalyst's Alpha Value to 3, which would have rendered the catalyst ineffective for aromatics alkylation. Phosphorous is known in the art of catalytic cracking as a means for increasing thermal stability of a zeolite. In column 14, lines 7 through 11, Degnan et al. state that phosphorous may be added for "any of the functions generally attributed thereto, such as, for example, attrition resistance, stability, metals passivation, and coke make reduction." It is respectfully noted that the discussion of phosphorous above occurs within a lengthy discussion of MCM-56 used as a catalytic cracking catalyst (col. 11, line 10 to col. 14, line 63).

Use of MCM-56 as an aromatics alkylation catalyst actually only appears three times in the Degnan et al. disclosure, first in the abstract, again at column 10, lines 28 through 60, and

finally in claims 1 through 11. None of these instances describe the MCM-56 as being used with phosphorus. Phosphorus is mentioned several times in the application, first in column 4, lines 19 through 31; second in column 14, lines 7 through 11; in example 15 and the text at column 24, lines 64 to 66; as well as in claims 26 and 32. All mention of phosphorus by Degnan et al. is made in the context of catalytic cracking catalysts, a known use of phosphorus.

It has been recognized that catalysis is unpredictable, and Applicants respectfully submit that a combination described as being useful for catalytic cracking neither anticipates nor renders obvious the beneficial selectivity effect of that combination in the production of mono-alkylaromatics.

For all of the reasons stated above, Applicants respectfully request the Examiner to reconsider and withdraw the rejections under 35 U.S.C. 102(b).

Rejection of Claims Under 35 U.S.C. 103(a)

The Examiner stated on page 3 of the Office Action dated February 27, 2003, that claim 6 was rejected as being unpatentable over Degnan et al. (U.S. Patent No. 5,536,894) in view of Cheng et al. (U.S. Patent No. 5,557,024). The Examiner observed that while Degnan et al. were silent respecting the phase of alkylation employed, U.S. Patent No. 5,557,024 to Cheng et al. discloses alkylation using an MCM-56 catalyst either in the gas or liquid phase. The Examiner argued it would have been obvious to one skilled in the art to have modified the Degnan et al. process by operating a liquid phase alkylation to arrive at Applicants' process because it is expected that alkylation processes operated in the liquid or gas phase yield similar results. Again, the combination of Degnan et al. with Cheng et al. does not make the present invention obvious because this combination does not disclose or make obvious the use of phosphorous with catalysts in alkylation processes under alkylation conditions.

The combination of Degnan and Cheng fails to disclose or suggest to one skilled in the art the present invention which provides a group of catalysts selective for the production monoalkylaromatics. Given this discovery, Applicants respectfully submit that the present claim 6 is patentable over the combined references. Accordingly, withdrawal of this rejection is respectfully requested.

With the amendments made herein and in light of the clarifications above, it is respectfully submitted that the claims are in condition to be allowed.

CONCLUSION

In view of the foregoing comments, entry of this Amendment and allowance of this application is earnestly solicited.

Respectfully submitted,

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